

32227

S/139/61/000/004/022/023

E032/E314

Application of the Doppler effect..

and b) the case where the discharge and the emission by the plasma occur in a narrow cylindrical region which contracts or expands under the action of electromagnetic forces. It is shown that by recording the emission at various angles to the axis of the chamber one can investigate, with the aid of the Doppler effect, the directed motion of plasma layers. On the other hand, by measuring the line profiles due to this directed motion one can determine the ion velocity distribution. The simultaneous measurement of the spectral-line profiles of neutral atoms and ions provides interesting information about the effect of the moving ions on the neutral atoms. The optical method appears to be the only possible method for studying the motion of the two types of particles separately. Determination of the temperature from the Doppler profile may lead to incorrect results if the directed motion is not taken into account. The success of these applications of the Doppler effect to the study of directed motion in plasma will depend on the

Card 2/3

X

32227

Application of the Doppler effect ... S/139/61/000/004/022/023
E052/E314

suitable choice of spectral lines for which other types of
broadening can either be included or allowed for.
There are 4 figures and 2 Soviet-bloc references.

ASSOCIATION: IAA imeni Dzerzhinskogo (IAA imeni
Dzerzhinskiy)
Moskovskiy energeticheskiy institut
(Moscow Power-engineering Institute)

SUBMITTED: January 4, 1960 (initially)
February 6, 1961 (after revision)

Card 3/3

X

ACCESSION NR: APL036569

8/0139/64/000/002/0136/0111

AUTHORS: Zagoryanskaya, Ye. V.; Kirayev, P. S.

TITLE: The role of interference for electron transmission through a double potential barrier

SOURCE: IVUZ. Fizika, no. 2, 1964, 136-141

TOPIC TAGS: interference, electron transmission, double potential barrier, Fabry Perot etalon, transmission coefficient, reflection coefficient

ABSTRACT: The transmission coefficient for a double potential barrier is computed and compared with that obtained for the analogous problem in optics, the Fabry-Perot etalon. The Fabry-Perot etalon consists of two semitransparent mirrors, each having coefficients of reflection r and transmission τ , which are separated by a distance t . For zero incidence angle of light (wavelength λ) on the system the transmission coefficient is

$$T = \frac{I_T}{I_0} = \frac{\tau^2}{1 + r^2 - 2r\cos[2kt + 2\delta]}$$

Card 1/5

ACCESSION NR: AP4036569

where $k = 2\pi/\lambda$ and δ is the phase shift of the light reflected from one of the mirrors. It is noted that the maximum value of the transmission coefficient is

$$T_{\max} = \frac{\tau^2}{(1-r)^2} = \frac{(1-r)^2}{(1-r)^2} = 1.$$

The double potential barrier is shown in Fig. 1 on the Enclosure, where the particle energy $E < U_0$. The transmission coefficient for the system is

$$T = \frac{\tau^2}{1 + r^2 - 2r^2 \cos 2kt + r(1-r)(e^{2\alpha} + e^{-2\alpha}) \cos 2kt} + \frac{\tau^2}{8\epsilon(1-r^2)r(1-r)(e^{2\alpha} - e^{-2\alpha}) \sin 2kt}$$

which is expressed in terms of the reflection and transmission coefficients of the single potential barrier,

$$r = \frac{1}{1 + \frac{16\epsilon^2}{(1+r^2)^2(e^{\alpha} - e^{-\alpha})^2}}$$

Card 2/5

ACCESSION NR: AP4036569

$$T = \frac{1}{1 + \frac{(1 + r^2)(e^{ka} - e^{-ka})^2}{16k^2}}$$

Here

$$k^2 = \frac{2mE}{\hbar^2},$$

$$r^2 = \frac{2m(U_0 - E)}{\hbar^2}$$

and

$$\xi = \frac{k}{r}.$$

The special case of infinitely high, thin barriers is considered where the quantity ka remains fixed. Then $r \rightarrow 1$ and

$$T = \frac{r^2}{1 + r^2 - 2r^2 \cos 2ka}.$$

Cord 3/5

ACCESSION NR: APl036569

which is only superficially similar to the expression for the optical case. The essential difference is made even more apparent by noting

$$T_{\text{max}} = \frac{(1-r)^2}{(1-r^2)} = \frac{1-r}{1+r} = \frac{1}{1+r} \approx \frac{1}{2}$$

Orig. art. has: 32 equations and 2 diagrams.

ASSOCIATION: Voyerino-inzhenernaya artilleriyskaya akademiya (Military Engineering Artillery Academy); Moskovskiy institut stali i splavov (Moscow Institute of Steel and Alloys)

SUBMITTED: 10Jul62

DATE ACQ: 05Jun64

ENCL: 01

SUB CODE: GP

NO REF SOV: 003

OTHER: 000

Card 4/5

ACCESSION NR: **AP4036569**

ENCLOSURE: 01

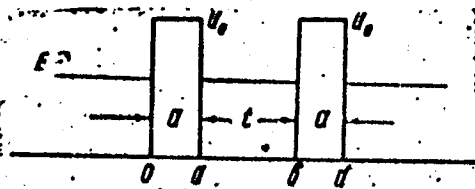


Fig. 1. Double potential barrier.

Card 5/5

ZAGORYANSKAYA, Ye. V.; KIREYEV, P.S.

Potential of a linear alternating charge. Izv. vys. ucheb.
zav.; fiz. no. 3:12-16 '64. (MIFA 17:9)

1. Moskovskiy institut stali i splavov Voenno-inzhenernaya
artilleriyskaya akademiya.

PA 46/49196

USSR/Physics
Spectra, Atomic
Electrodes

May 49

"Measuring the Relative Probabilities of Transi-
tion of Some Cr II Lines and Determining the
Temperature of a Condensed Spark Between Steel
Electrodes," Ye. V. Zagoryanskaya, Moscow State U,
4 pp

"Zhur Eksp. i Teoret. Fiz." Vol XIX, No 5

Measured relative probabilities of transitions of
certain chrome Cr II lines (2,876 - 2,860 ang-
stroms). Measurements were made in the arc

46/49196

May 49

USSR/Physics (Contd)

spectrum between carbon electrodes by measuring
relative intensities of Cr II lines. Measured
temperature of condenser arc between steel elec-
trodes according to Cr II lines. Submitted
6 Nov 48.

46/49196

ZAGORYANSKAYA, Ye. V.

ZAGORYANSKAYA, Ye. V.

Investigation of spectrum excitation conditions in the controlled spark source. Ye. V. Zagoryanskaya. Zhuravskaya Lab. 15, 51-9 (1949). - Abs. and relative intensities, electrode temps., analytical gap voltages, current, and spark temps. were observed as a function of time for several arc and spark lines of Fe, Cr, V, Si, Mg, and Al with an uncontrolled spark source, and one in which triggering was provided by an auxiliary high-frequency fixed-gap spark circuit inductively coupled into the main circuit. With steel electrodes, the triggered source gave more stable intensity ratios and gap voltages than did the uncontrolled source; with Duralumin electrodes, there was little difference between sources. Sparking-off effects are not primarily due to heating up of the electrode, and are not eliminated by keeping gap voltage and amperage const. The temp. of the spark itself is const. throughout the exposure.

Cyrus Feldman -

A53
i

ZAGORYANSKAYA, Ye V

SA

529.338 : 534.52

4630. Measurement of the relative transition probability of some lines of Cr II and determination of the temperature of a condensed spark between steel electrodes. ZAGORYANSKAYA, E. V. J. Exp. Theor. Phys., USSR, 19 (No. 5) 447-50 (May, 1949) In Russian.—The measurements were carried through in the arc spectrum between Co electrodes by measuring the relative intensities of the Cr II lines; the temperature of the condensed arc between steel electrodes then also being determined from the Cr II lines. S. P. K.

A50-514 METALLURGICAL LITERATURE CLASSIFICATION

FROM SOURCE
NUMBER 72

RELATIONS

DATE

KIREYEV, Petr Semenovich; ZAGORYANSKAYA, Yelizaveta Vasil'yevna;
STRIGANOV, A.R., red.; PERKOVSKAYA, T.Ye., red. izd-va;
PAVLOVA, V.A., tekhn. red.

[Molecular spectrum analysis] Molekuliarnyi spektral'nyi analiz.
Moskva, Gos. izd-vo "Vysshaya shkola," 1961. 142 p. (MIRA 15:1)
(Spectrum, Molecular)

ZAGORYANSKAYA, Ye.V.; KIREYEV, P.S.

Determining the optical constants of thin films from the
interference figure. Izv.vys.ucheb.zav.; fiz. no.4:124-133 '61.
(MIRA 14:10)

1. Moskovskiy energeticheskiy institut.
(Interferometry)

ZAGORYANSKAYA, Ye.V.; KIREYEV, P.S.

Use of the Doppler effect in studying processes occurring in a
gas discharge plasma. Izv.vys.ucheb.zav.; fiz. no.4:163-167
'61. (MIRA 14:10)

1. Moskovskiy energeticheskiy institut.
(Plasma (Ionized gases)) (Doppler effect)

ZAGORYANSKAYA-FEL'DMAN, V.A.

Treatment of laryngeal cancer by ligation of the afferent vessels with subsequent X-ray therapy. Vest. otorinol. 13 no.2:46-50 Mar-Apr 51. (CML 20:8)

1. Doctor Medical Sciences. 2. Of the Clinic for Diseases of the Ear, Throat, and Nose (Director--Honored Worker in Science A.I. Mel'dman), Moscow Oblast Scientific-Research Clinical Institute--Central Institute for the Advanced Training of Physicians (Director--V.P. Lebedeva).

ZAGORYANSKAYA, V.A., doktor med.nauk

Laryngitis. Zdorov'e 5 no.8:30-31 Ag '59.
(LARYNX—DISEASES)

(ICRA 13:8)

ZAGORYANSKIY, A.; KAPLINA, K.

Fiftieth anniversary of "Pravda." Mest.prom.1 khud.promys.
3 no.5:8-9 My '62. (MJRA 15:6)

1. Redaktor gazety "Za obraztsovoye obsluzhivaniye" (for
Kaplina).

(Newspapers)

BEREZIN, N.T.; ZAGORYANSKIY, A.D.

Fishes. Zdorov'ie 5 no.11:22-23 N '59.
(Fish as food)

(MIL 13:3)

ZAGORYANSKIY, Ye., master SSSR po shakmatam

Electronic chess player. IUn.tekh. 3 no.4:71-73 Ap '59. (MIRA 12:4)

(Chess)

(Electronic calculating machines)

BUSHE, N.A., kand. tekhn. nauk NARSIKH, I.I., kand. tekhn. nauk;
BABAYEV, N.K., aspirant; ZAGORYANSKIY, Yu.A., inzh.

Testing of aluminum alloy bearings for diesel locomotive engines.
Vest. TSNII MPS 22 no.7:39-44 '63. (MIRA 16:12)

1. Tashkentskiy institut inzhenerov zheleznodorozhnogo transporta
(for Babayev).

VOLODIN, A.I., kand.tekhn.nauk; NARSIKH, I.I., kand.tekhn.nauk;
ZAGORYANSKIY, Yu.A., inzh.

Methods for measuring the wear of the crankshafts of diesel
locomotive engines. Trudy TSNII MPS no.262:73-84 '53.

(MIRA 16:10)

ZAGOR'YE, A.M.; ZAKH, R.G.

Burning of natural lignin with increased initial moisture. Gidroliz.
1 lesokhim. prom. 18 no.6:6-10 '65. (MIRA 18:9)

9701-66

ACC NR: AP5026567

SOURCE CODE: UR/0286/65/000/019/0131/0131

AUTHOR: Zagor'ye, B. A.

ORG: none

13
23

TITLE: A device for hoisting small craft to the deck of a ship-base and lowering them to the water. Class 65, No. 175407

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 19, 1965, 131

TOPIC TAGS: boat, elevating gear, safety device, water traffic

ABSTRACT: This Author Certificate presents a device for hoisting small craft onto the deck of a ship-base and for lowering them into the water. The device includes metal supporting structures with cantilever beams hinged to joints, and a block-and-tackle system with a cable passing through the blocks of the tackle. The device is intended to increase the safety of lifting and lowering craft under rough sea conditions. The block-and-tackle system is made with stays of a fixed length, fastened to upper points of the inclined masts of the metal structures. These structures are displaced toward the diametric plane of the ship-base in reference to the diametric plane of the small craft. The stays take on part of the weight of the small craft during its setting on the deck of the ship-base and while lowering it from the deck. This is accomplished with the simultaneous cleansing or recovering of the cables (passing through the blocks of the tackle) by winches which automatically recover the slack. To mechanize the

Card 1/2

UDC: 629.125.65

L 9701-66

ACC NR: AP5026567

positioning of the small craft to its assigned location, a boat dolly with a keel block carriage (which moves in a vertical direction) is mounted on the deck of the ship-base. The small craft are moved along the deck of the ship on this boat dolly. This movement is directed by a specially designed cable and winch, the latter mounted on the deck of the ship.

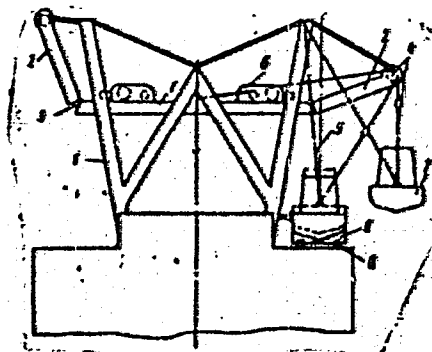


Fig. 1. 1 - Metal supporting structures; 2 - cantilever beams; 3 - hinges; 4 - block-and-tackle system; 5 - stays; 6 - winch of mechanism for the automatic recovery of the cable slack; 7 - small craft; 8 - boat dolly; 9 - keel block carriage.

Orig. art. has: 1 figure.
SUB CODE: 13/ SUBR DATE: 17Jun63
Card 2/2

RABOKH, Ya. [Raboch, J.], ZAGORZH, Z. [Zahor, Z], FAYKS, Ch. [FELIX, C]. (Praga)

Testicular biopsy in endocrine disorders [with summary in English].
Probl.endok., 1 gorm. 4 no.3:78-87 Ky-Je '58 (MIRA 11:8)

1. Iz Seksologicheskogo instituta (dir. - prof. Y.Giniye), II-go
Patologoanatomicheskogo instituta (dir. - prof. V.Yedlichka) i 2-y
terapevticheskoy kliniki (nav. - prof. F. Gerles) Karlska universiteta.

(TESTICLE, pathology.

biopsy in endocrine dis. (Rus))

(ENDOCRINE DISEASES, pathology.

testicular biopsy (Rus))

ZAGOSKINA, M.A.

Complications with reference to the nervous system following inoculations for rabies. Sbor. trud. Kursk. gos. med. inst. no.13: 226-230 '58. (MIRA 14:3)

1. Iz kliniki nervnykh bolezney (zav. - prof. N.I.Golik) Kurskogo gosudarstvennogo meditsinskogo instituta i antirabicheskogo otdeleniya (zav. - I.I.Postolenko) Kurskoy oblsanepidstantsii.
(NERVOUS SYSTEM—DISEASES) (RABIES)

1ST AND 2ND CROSS										3RD AND 4TH CROSS									
PROCESSES AND RECOVERED INDEX																			
<p>PA</p> <p>The utilization of the by-products of the cotton industry in Middle Asia. A. P. ZAKHARCHIKOV, V. T. IVANOVA, G. A. KULCHENKOVICH AND A. M. KUTEMINA. <i>Khlopokovaya Promyshlennost</i> Nos. 6-7, 97-112 (1931). -- The authors discuss the possibilities of utilizing the various by-products in the cotton industry, such as the hulls, stems, boll residue, leaves and lint, for cattle feed, cellulose manuf., etc. of linters, penicillin, squalene, propene of lignin and other products. Chem. analyses of the various parts of the cotton plant and the by-products are given.</p> <p>J. S. JONES</p>																			
<p>ASO. S.L.A. METALLURGICAL LITERATURE CLASSIFICATION</p>																			
<p>13000 570 01100</p>										<p>13000 02-1170</p>									
<p>13000 570 01100</p>										<p>13000 02-1170</p>									

Interdetermination of pesticides in vegetable materials by the method of Tullens. A. K. KALICHNEV, V. F. IVANOV, AND A. KUBENKOVA. J. Applied Chem. (U.S.S.R.) 5, 235-45 (1932).-- The method of Tullens is unreliable and cannot be used in exact work. V. KALICHNEV

CIA-RDP86-00513R001963420006-0"

B-II-5

Composition of cotton from various regions.
B. I. ARDAMOV, A. F. KASIMOV, B. I. LOMOV,
and B. L. FLADINA (Cotton Ind. Trust, U.S.S.R., Coll.
Papers, 1931, No. 1, 1-16).—Oil content and acid
imp., and I rule. Sorts to slightly with the region.
Cz. Acc.

ADD. 11A METALLURGICAL LITERATURE CLASSIFICATION

FROM 11000000										FROM 11000000									
11000000										11000000									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Ca

25

A summary of investigations on the chemical composition of cotton fiber at various stages of maturity. A. I. Zakharov, B. I. Leonov and R. I. Mankin. *Khimiya Khlokh (Cotton Ind. Transl.)*, Collection of papers No. 1, 3-11 (1933).--Analyses are presented on the composition of cotton fiber and seed in bolls 30, 35, 40, 45, 50 and 60 days after blossoming. The H₂O and oil contents of the seeds, the percentage of cellulose, total cellulose and percentage of N in the fiber are recorded. Unripe cotton from bolls which had no time to mature is better than cotton harvested from bolls with a 25-day or similar period of growth early in the season. J. S. Jaffe

450.55.4 METEOROLOGICAL LITERATURE CLASSIFICATION

co

23

The chemical composition of cotton from various regions.
H. I. Ardsherv, A. P. Zakharovich, B. I. Lenzov and
M. L. Mashkin. *Trent Khimicheskii* (from. (Cotton
Ind. Trust), *Collection of papers* No. 1, 12-14(1922).--
Cotton from 3 different points in Central Asia was analysed
for moisture, ash, cellulose, alky. of ash, total N, P and
ether and H₂O exts. The oil content, the acid no., the
sapon. no. and I no. fluctuate slightly with the region.
J. S. Jude

PRINCIPLES AND PRESENT IS NOT																									
<p><i>ca</i></p> <p>The chemical composition of cotton hybrids. B. I. Ardashov, A. P. Zakoschikov, B. I. Leonov and R. L. Raskina. <i>Trest Khlopkochistitelnoi Prom. (Cotton Ind. Trust), Collection of papers No. 1, 16-19(1933).</i>—The oil content was higher in the hybrids from upland (American) and Egyptian cotton; the ash content was also lower in the fiber, an indication of an improvement in the quality of the fiber.</p> <p>I. S. Ioffe</p>													<p><i>25</i></p>												
<p>AS 55.4 METALLOGICAL LITERATURE CLASSIFICATION</p>																									

117 120 125 128 131 134 137 140 143 146 149 152 155 158 161 164 167 170 173 176 179 182 185 188 191 194 197 200 203 206 209 212 215 218 221 224 227 230 233 236 239 242 245 248 251 254 257 260 263 266 269 272 275 278 281 284 287 290 293 296 299 302 305 308 311 314 317 320 323 326 329 332 335 338 341 344 347 350 353 356 359 362 365 368 371 374 377 380 383 386 389 392 395 398 401 404 407 410 413 416 419 422 425 428 431 434 437 440 443 446 449 452 455 458 461 464 467 470 473 476 479 482 485 488 491 494 497 500 503 506 509 512 515 518 521 524 527 530 533 536 539 542 545 548 551 554 557 560 563 566 569 572 575 578 581 584 587 590 593 596 599 602 605 608 611 614 617 620 623 626 629 632 635 638 641 644 647 650 653 656 659 662 665 668 671 674 677 680 683 686 689 692 695 698 701 704 707 710 713 716 719 722 725 728 731 734 737 740 743 746 749 752 755 758 761 764 767 770 773 776 779 782 785 788 791 794 797 800 803 806 809 812 815 818 821 824 827 830 833 836 839 842 845 848 851 854 857 860 863 866 869 872 875 878 881 884 887 890 893 896 899 902 905 908 911 914 917 920 923 926 929 932 935 938 941 944 947 950 953 956 959 962 965 968 971 974 977 980 983 986 989 992 995 998 1001 1004 1007 1010 1013 1016 1019 1022 1025 1028 1031 1034 1037 1040 1043 1046 1049 1052 1055 1058 1061 1064 1067 1070 1073 1076 1079 1082 1085 1088 1091 1094 1097 1100 1103 1106 1109 1112 1115 1118 1121 1124 1127 1130 1133 1136 1139 1142 1145 1148 1151 1154 1157 1160 1163 1166 1169 1172 1175 1178 1181 1184 1187 1190 1193 1196 1199 1202 1205 1208 1211 1214 1217 1220 1223 1226 1229 1232 1235 1238 1241 1244 1247 1250 1253 1256 1259 1262 1265 1268 1271 1274 1277 1280 1283 1286 1289 1292 1295 1298 1301 1304 1307 1310 1313 1316 1319 1322 1325 1328 1331 1334 1337 1340 1343 1346 1349 1352 1355 1358 1361 1364 1367 1370 1373 1376 1379 1382 1385 1388 1391 1394 1397 1400 1403 1406 1409 1412 1415 1418 1421 1424 1427 1430 1433 1436 1439 1442 1445 1448 1451 1454 1457 1460 1463 1466 1469 1472 1475 1478 1481 1484 1487 1490 1493 1496 1499 1502 1505 1508 1511 1514 1517 1520 1523 1526 1529 1532 1535 1538 1541 1544 1547 1550 1553 1556 1559 1562 1565 1568 1571 1574 1577 1580 1583 1586 1589 1592 1595 1598 1601 1604 1607 1610 1613 1616 1619 1622 1625 1628 1631 1634 1637 1640 1643 1646 1649 1652 1655 1658 1661 1664 1667 1670 1673 1676 1679 1682 1685 1688 1691 1694 1697 1700 1703 1706 1709 1712 1715 1718 1721 1724 1727 1730 1733 1736 1739 1742 1745 1748 1751 1754 1757 1760 1763 1766 1769 1772 1775 1778 1781 1784 1787 1790 1793 1796 1799 1802 1805 1808 1811 1814 1817 1820 1823 1826 1829 1832 1835 1838 1841 1844 1847 1850 1853 1856 1859 1862 1865 1868 1871 1874 1877 1880 1883 1886 1889 1892 1895 1898 1901 1904 1907 1910 1913 1916 1919 1922 1925 1928 1931 1934 1937 1940 1943 1946 1949 1952 1955 1958 1961 1964 1967 1970 1973 1976 1979 1982 1985 1988 1991 1994 1997 2000 2003 2006 2009 2012 2015 2018 2021 2024 2027 2030 2033 2036 2039 2042 2045 2048 2051 2054 2057 2060 2063 2066 2069 2072 2075 2078 2081 2084 2087 2090 2093 2096 2099 2102 2105 2108 2111 2114 2117 2120 2123 2126 2129 2132 2135 2138 2141 2144 2147 2150 2153 2156 2159 2162 2165 2168 2171 2174 2177 2180 2183 2186 2189 2192 2195 2198 2201 2204 2207 2210 2213 2216 2219 2222 2225 2228 2231 2234 2237 2240 2243 2246 2249 2252 2255 2258 2261 2264 2267 2270 2273 2276 2279 2282 2285 2288 2291 2294 2297 2300 2303 2306 2309 2312 2315 2318 2321 2324 2327 2330 2333 2336 2339 2342 2345 2348 2351 2354 2357 2360 2363 2366 2369 2372 2375 2378 2381 2384 2387 2390 2393 2396 2399 2402 2405 2408 2411 2414 2417 2420 2423 2426 2429 2432 2435 2438 2441 2444 2447 2450 2453 2456 2459 2462 2465 2468 2471 2474 2477 2480 2483 2486 2489 2492 2495 2498 2501 2504 2507 2510 2513 2516 2519 2522 2525 2528 2531 2534 2537 2540 2543 2546 2549 2552 2555 2558 2561 2564 2567 2570 2573 2576 2579 2582 2585 2588 2591 2594 2597 2600 2603 2606 2609 2612 2615 2618 2621 2624 2627 2630 2633 2636 2639 2642 2645 2648 2651 2654 2657 2660 2663 2666 2669 2672 2675 2678 2681 2684 2687 2690 2693 2696 2699 2702 2705 2708 2711 2714 271

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STANDARD MICROFILM		SERIALS ACQUISITION		RESEARCH & DEVELOPMENT		TECHNICAL SERVICES		ADMINISTRATIVE SERVICES		GENERAL INFORMATION	
<p>HOMOGENEITY OF PLANT CELLULOSES AND THEIR PRODUCTS. I. Cross-section elements and methods of their separation. II. Content of cross-structure elements in plant celluloses. A. KAZEMZADEH and D. TOMLINSON (Lakewood, Va.). 1964, B, 5-12; 1965, G, 176-182.—I. The presence of cross-section elements in the cellulose material of untreated larch and ramie, unrefined cotton, paper, nitrocellulose, etc. was shown by treating with 64–66% H₂SO₄. The solutions, diluted with ice-H₂O, filtered, and centrifuged, separated the chemically unchanged cross elements.</p> <p>II. A method of determining these cross-section elements is based on treatment with H₂SO₄. Yields were 0.1–0.6% in raw and 0.07–2.14% in refined cotton, 1.3% in unbleached and 0.07–0.08% in bleached spruce pulp. (R. Ann. (c))</p>											
<p>ADDITIONAL LITERATURE REFERENCES</p>											
<p>INDEXED BY AUTHOR</p>											
<p>RESEARCH & DEVELOPMENT</p>											
<p>TECHNICAL SERVICES</p>											
<p>ADMINISTRATIVE SERVICES</p>											
<p>GENERAL INFORMATION</p>											

CA

723

Use as copper-ammonia solutions for the determination
of impurities in (cotton) linters. A. F. Zakharikhin,
Izvestiya Vsesoyuznogo Nauchno-Issledovatskogo Instituta Khimicheskoy Tekhnologii (Artificial Fiber) 3, No. 1, 86-9
(1954).—Expose 1.5-3 g. of crude or refined linters to the
fumes of HCl for about 1 min. and then to NH₃, wash,
dry and dissolve in Schweitzer's reagent, filter, wash the
insol. residue, dry and weigh. Chas. Blanc

ASSOCIATED METALLURGICAL LITERATURE CLASSIFICATION

FROM SYNDICATE

SECONDARY HAS ONE USE

EXISTENCE

FROM BOWLING

EXISTS ON ONE IS

23

1ST AND 2ND ORDERS PROCESSES AND PROPERTIES INDEX

CA

Determination of the ripeness of linters fiber and calculation of cellulose yields by cooking. A. Zakharchukov. *Izvestiya Vsesoyuznogo Nauchno-Issledovatskogo Instituta Khimicheskogo Volokna (Artificial Fiber) 3, No. 3, 27-31 (1934).*—One g. of linters, wet with alc. and pressed out, is treated 5 min. at room temp. with 60 cc. 16% NaOH, filtered through a sieve, washed free from NaOH, boiled 10 min. with 100 cc. of 1% Congo red, filtered through a sieve, washed with H₂O, pressed out and analyzed under a microscope at 100-50 magnification. Ripe fiber gives bright-red cylindrical forms; semiripe, bright-red twists; unripe, faint rose twists; dead fiber, colorless flat ribbons. The cellulose yields are detd. by cooking linters with 1.5% NaOH at 140° for 5 hrs. A method of calcg. the cellulose yields is proposed. C. R.

RESEARCH LITERATURE CLASSIFICATION

RESEARCH LITERATURE CLASSIFICATION

101 AND 102 GROUPS

PROCEDURE AND PROPERTY INDEX

30

B-II-5

Determination of degree of purity of cotton wool.
 A. E. Karpovskiy (I. Appl. Chem. Rev., 1954, 7, 101-102). — The degree of non-cellulose impurities is determined by treating the sample with damp HCl for 2 min., with HCl for 0.5 min., washing with H₂O, dissolving in potassium's reagent, filtering, and weighing the residue.
 R. T.

ASO-114 DETAILING LITERATURE CLASSIFICATION

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3401 3402 3403 3404 3405 3406 3407 3408 3409 3410 341

23

ca

Processes and Properties Index

New method for evaluating filter by the ripeness of the fiber and by calculating the cellulose yields on boiling.

A. P. Zakharovich, *J. Applied Chem. (U. S. S. R.)* 7, 1197-1205 (1934).—The ripeness of the filter fiber is detd. by mercerizing with a soln. of NaOH, washing with water and dyeing with Congo red. All the fibers are easily distinguished in the mercerized fibers and can be subdivided into 4 groups by their color after acidification. The ripeness is expressed by the percentage of fibers represented by each group (A%, B%, C%, D%). The cellulose yield obtained after boiling the filter is calcd. from $Aa + Bb + Cc + Dd = x$, where $a = 0.97$, $b = 0.63$, $c = 0.53$ and $d = 0.31$, the latter factors indicating the degree of participation of the fibers in the formation of cellulose on boiling, i. e., their content in cellulose. A correction for contamination (Z) of the filter is obtained from $x(100 - Z)/100$.

A. A. Northcutt

ASAC-11A METALLURGICAL LITERATURE CLASSIFICATION

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23

Rational expression of the results of determining the viscosity of cuprammonium solutions of cellulose. A. Zakoshchikov. *Org. Chem. Ind.* (U. S. S. R.) 7, 31-6 (1930).—A discussion, with math. treatment, of the method of Tumarkin (*C. A.* 28, 4225^a). Chas. Nanc

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

CO

New method for estimating the purity of cellulose preparations. Determination of the transparency and whiteness of cellulose solutions in sulfuric acid with the aid of the [tellurium] photoelectric cell. A. P. Zakharchikov and D. P. Tumarkin. *Org. Chem. Ind. (U. S. S. R.)* 2, 404-412 (1936); cf. C. A. 29, 7637. — As previously shown, cellular materials contain weighable insol. "cross-structure elements" (I) that resist the destructive action of mech. and chem. forces employed in the processes of refining and subsequent conversion into esters. The presence of the suspended I in the solns. of cellulose esters is one of the causes of the inadequate transparency (turbidity) of the finished products (celluloid, cinematographic films, etc.). A method proposed for detg. the turbidity and coloration of the solns. of cellulose and its derivs. with the aid of the Se photocell, cell gives indirectly the "index of whiteness" of the product. The advantages claimed for this method of detg. whiteness are its objectivity of results and the freedom from the difficulties and shortcomings of the direct photometric detn. by various methods, which with cellulose (liners) samples are accentuated by the uneven surface of an opaque box (50 × 20 × 30 cm.), in which the light from an elec. incandescent lamp, after passing through a converging lens, is made parallel by means of 2 diaphragms and then is directed through the soln. to be tested and from this onto the Se photocell (2.5 sq. cm. surface) connected with a galvanometer of a sensitivity of 10^{-6} amp. The assembly is provided with a 30-v. storage battery, Hg circuit breaker and rheostat.

3

Immediately before the detns., the circuit is adjusted to a const. light intensity falling on the photocell. By using the same container and H₂SO₄ vol., the light transmitted by them can be disregarded. Since the light transmitted through a colored turbid soln. is weakened both by dispersion and absorption, the turbidity (transparency) is detd. by examg. the soln. before and after the remv. of I with H₂O. Since the soln. (photofilter) is not decolorized by H₂O, the procedure gives also the value of the color intensity of the soln. Five successive detns. of a specimen are made by adding 100 cc. H₂O to a soln. of 2 g. liners in 10 cc. of 61% H₂SO₄, and then filtering through a glass filter No. 1, lined at the bottom with a 0.2-0.3-cm. layer of bleached liners. The filtrate is examd. in the app. and the photocell. current I_1 , corresponding to the light transmitted through the soln., is read off the galvanometer. A part (100-200 cc.) of the unfiltered filtrate is shaken with 10-15 cc. H₂O and the clear, colored liq. layer is examd. as above, giving the photocell. current I_2 . To obtain the index of whiteness P , the photocell. current I_1 of distd. H₂O is required. The transparency P of the soln. is calcd. by the formula: $(I_2 \times 100)/I_1\%$; evidently the turbidity proper of the soln. is $(100 - P)\%$. Since the color intensity of a cellulosic material in H₂SO₄ soln. is directly related to its degree of whiteness, it follows that $P = (I_2 \times 100)/I_1\%$. For cellulosic materials of an ideal whiteness, giving colorless H₂SO₄ solns., $P = 100\%$. No direct relation between P and P_{exist} exists, inasmuch as very white liners can give H₂SO₄ solns. of poor transparency, and conversely. The method is suitable only for estns.

of whiteness of refined cellulose products; the accuracy is better than 1%. The method was used in extn. study of the factors detg. the transparency and whiteness of linters and that of nitrocellulose (II) and cellulose acetate (III). The results show that the transparency (turbidity) of II and III is directly related to that of the refined linters used in the production. Transparency tests and chem. analysis reveal that the transparency of Soviet refined linters is directly related to the contents of fats and waxes and inversely to the wetability of linters. A direct relation exists between the degree and variability of transparency of finished linters and that of the age of crude linters, which varies from 38% for green to 68% for matured linters. The transparency is fundamentally detd. by the condition of alk. steeping and is independent of the de-

gree and method of bleaching. The transparency of bleached sulfate pulp is nearly equal to that of high-grade linters; it is suitable for conversion into II. The index of whiteness of different samples varies considerably less than the transparency, but is for linters of different mills less const. than the transparency. The transparency and whiteness of American (Hercules Powder Company) refined linters is greater than that of Soviet products; it is 88.96 and 99.6%, resp. Chas. Blanc

Use of the method of viscosity for evaluation of the potential wearing qualities of fiber materials. A. V. Surovaya and A. P. Zakushechikov. *Colloid J.* (U. S. S. R.) 3, 785-85 (1967). The method is suitable in the textile industry for detg. the quality of cotton cloth.

John Livak

ASH-11A METALLURGICAL LITERATURE CLASSIFICATION

23

Relation between the adsorptive properties of cellulose
and the viscosity of its solutions. A. P. Zakoshchikov,
Org. Chem. Ind. (U. S. S. R.) 4, 677-8 (1957). A pre-
liminary communication. Chas. Blaw

ADD-66A METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Ch
Decomposition of hypochlorites in the presence of activators. I. The action of various activators on hypochlorite solution. A. P. Zakushchikov, R. G. Nezhel'skaya and N. A. Pikhunova. *J. Applied Chem. (U. S. S. R.)* 10, 34-45 (1937).—The decompos. of hypochlorite is independent of the velocity of introduction of the activator in the case of the following activators: urea, ethylurea, diethylurea, NH_4OH , EtNH_2HCl , Et_2NH , and MeNH_2HCl , which are slow-acting activators. The action of $(\text{NH}_4)_2\text{CO}_3$, $(\text{NH}_4)_2\text{C}_2\text{O}_4$, $(\text{NH}_4)_2\text{SO}_4$, HCl , HNO_3 , AcONH_2 , and $(\text{NH}_4)_2\text{PO}_4$ depends on the velocity of their introduction into a hypochlorite soln., increasing with a gradual introduction. With all salts the max. decompos. is obtained at the hypochlorite: NH_4 salt mol. ratio of 1:0.5, and a min. at that of 1:1. The action of H_2O_2 and $\text{Na}_2\text{S}_2\text{O}_3\text{HCl}$ increases with concn. The decompos. of hypochlorite by the slow-acting activators increases with duration of the reaction. The action of NH_4OH is similar to that of its salts, that of urea and dimethyl-urea is progressive at all concns., that of EtNH_2HCl , MeNH_2HCl , MeNH_2 , HCl and EtNH_2 is very slow. Thus, an activator of the MeNH_2HCl type decomps. 80% of hypochlorite in 5-6 hrs., whereas the same amt. is decomd. by NH_4OH or urea in 20-30 min. and in a few sec. by the NH_4 salts. Pyridine and Me_2N have no effect on a hypochlorite. In all cases the formation of intermediate compds., having the properties of chloramines, was observed. The decompos. of hypo-

chlorite in the presence of cotton cellulose by urea does not lower the viscosity of the cellulose but protects the fiber, whereas NH_4OH and its salts are harmful to the cellulose, see reference. II. Change of the composition of the hypochlorite bath during its decomposition in the presence of activators. A. P. Zakushchikov and N. A. Pikhunova. *Ibid.* 40-61. The decompos. yields chloramines, which partially remain in soln., even after the end of the decompos. During the decompos. of hypochlorite the main portion of Cl of the hypochlorite forms chloride (90%), and the total amt. of Cl in soln. decreases because some Cl is removed, during the decompos., in the form of volatile N -contg. compds. In the absence of cotton cellulose, the formation of a small amt. of chlorate was observed, probably, because of side reactions. A decrease of the alkyl of a hypochlorite bath was also observed. The

see other side →

content of the active Cl was detd. by the Rupp method, that of chloride by the Peters and Deutschlander method, and that of total Cl by the Volhard method. The chloramines were detd. by the modified KJ method (cf. C. A. 26, 6218) as follows: A soln. of 50 cc. of dried water, 1 cc. of 1-4% H₂O₂, 10 cc. of dried ether, and 10 cc. of ammonia was allowed to stand for 2 min. in a flask with glass stopper; 20 cc. of 10% KJ was added, then 10 cc. of 10% KI was added until an appearance of a pink coloration; 100 cc. of water, 1-2 drops of 0.01 N thiouamide soln. and 10 cc. of 10% KI were added, and the soln. was iodometrically titrated. The amt. of the chloramine Cl is $(C \times 10 \times 0.00556) / 2\%$, where C is cc. of 0.1 N thiouamide used in titration. Two refer-
ences.

A. A. Podgorny

TEST AND INS. ORDER		PROCESS AND PROPERTIES INDEX		MO AND A.M. ORDER	
1		2		3	
4		5		6	
7		8		9	
10		11		12	
13		14		15	
16		17		18	
19		20		21	
22		23		24	
25		26		27	
28		29		30	
31		32		33	
34		35		36	
37		38		39	
40		41		42	
43		44		45	
46		47		48	
49		50		51	
52		53		54	
55		56		57	
58		59		60	
61		62		63	
64		65		66	
67		68		69	
70		71		72	
73		74		75	
76		77		78	
79		80		81	
82		83		84	
85		86		87	
88		89		90	
91		92		93	
94		95		96	
97		98		99	
100		101		102	
103		104		105	
106		107		108	
109		110		111	
112		113		114	
115		116		117	
118		119		120	
121		122		123	
124		125		126	
127		128		129	
130		131		132	
133		134		135	
136		137		138	
139		140		141	
142		143		144	
145		146		147	
148		149		150	
151		152		153	
154		155		156	
157		158		159	
160		161		162	
163		164		165	
166		167		168	
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PROCESSING AND PROPERTIES INDEX	
CA	<p>6 A new method for bleaching cotton fabrics with chlorine gas. N. A. Mikhalev, A. P. Zakharovich, N. A. Boris and N. I. Stepanova. <i>Novye Atraznyye Krasivye i Odolnye Khlopchatobumazh. Tkanst, Shornik Rabot Khim. Kolorist. Odel. Nauch.-Issledovatel. Inst. Khlopchatobumazhaot Prom.</i> 1939, 7-41; <i>Khim. Referat. Zhur.</i> 1940, No. 8, 108-9; cf. C. A. 36, 1180¹.—The fabric is wet with water (not in NaOH soln.), treated with Cl₂, washed with water and alkali, boiled in NaOH soln. with rosin soap, washed, treated with NaCl soln., washed, acidified, washed and dried. Cl₂ transforms the noncellulose substances partly into polymeric derivs. of sugars and starch, which during the subsequent treatment with alkali are easily regd. from the fabric. Wetting in water produces a strong fabric with a high capillarity, whiteness and y and permits a longer treatment with Cl₂ than is possible on wetting the fabric in alkali. The method was verified in the lab. and under semiproduction and production conditions. Good results were obtained. W. R. Henn</p>
ASB-ILA METALLURGICAL LITERATURE CLASSIFICATION	
<p>GROUP 1</p> <p>GROUP 2</p> <p>GROUP 3</p> <p>GROUP 4</p> <p>GROUP 5</p> <p>GROUP 6</p> <p>GROUP 7</p> <p>GROUP 8</p> <p>GROUP 9</p> <p>GROUP 10</p> <p>GROUP 11</p> <p>GROUP 12</p> <p>GROUP 13</p> <p>GROUP 14</p> <p>GROUP 15</p> <p>GROUP 16</p> <p>GROUP 17</p> <p>GROUP 18</p> <p>GROUP 19</p> <p>GROUP 20</p> <p>GROUP 21</p> <p>GROUP 22</p> <p>GROUP 23</p> <p>GROUP 24</p> <p>GROUP 25</p> <p>GROUP 26</p> <p>GROUP 27</p> <p>GROUP 28</p> <p>GROUP 29</p> <p>GROUP 30</p> <p>GROUP 31</p> <p>GROUP 32</p> <p>GROUP 33</p> <p>GROUP 34</p> <p>GROUP 35</p> <p>GROUP 36</p> <p>GROUP 37</p> <p>GROUP 38</p> <p>GROUP 39</p> <p>GROUP 40</p> <p>GROUP 41</p> <p>GROUP 42</p> <p>GROUP 43</p> <p>GROUP 44</p> <p>GROUP 45</p> <p>GROUP 46</p> <p>GROUP 47</p> <p>GROUP 48</p> <p>GROUP 49</p> <p>GROUP 50</p> <p>GROUP 51</p> <p>GROUP 52</p> <p>GROUP 53</p> <p>GROUP 54</p> <p>GROUP 55</p> <p>GROUP 56</p> <p>GROUP 57</p> <p>GROUP 58</p> <p>GROUP 59</p> <p>GROUP 60</p> <p>GROUP 61</p> <p>GROUP 62</p> <p>GROUP 63</p> <p>GROUP 64</p> <p>GROUP 65</p> <p>GROUP 66</p> <p>GROUP 67</p> <p>GROUP 68</p> <p>GROUP 69</p> <p>GROUP 70</p> <p>GROUP 71</p> <p>GROUP 72</p> <p>GROUP 73</p> <p>GROUP 74</p> <p>GROUP 75</p> <p>GROUP 76</p> <p>GROUP 77</p> <p>GROUP 78</p> <p>GROUP 79</p> <p>GROUP 80</p> <p>GROUP 81</p> <p>GROUP 82</p> <p>GROUP 83</p> <p>GROUP 84</p> <p>GROUP 85</p> <p>GROUP 86</p> <p>GROUP 87</p> <p>GROUP 88</p> <p>GROUP 89</p> <p>GROUP 90</p> <p>GROUP 91</p> <p>GROUP 92</p> <p>GROUP 93</p> <p>GROUP 94</p> <p>GROUP 95</p> <p>GROUP 96</p> <p>GROUP 97</p> <p>GROUP 98</p> <p>GROUP 99</p> <p>GROUP 100</p>	<p>GROUP 1</p> <p>GROUP 2</p> <p>GROUP 3</p> <p>GROUP 4</p> <p>GROUP 5</p> <p>GROUP 6</p> <p>GROUP 7</p> <p>GROUP 8</p> <p>GROUP 9</p> <p>GROUP 10</p> <p>GROUP 11</p> <p>GROUP 12</p> <p>GROUP 13</p> <p>GROUP 14</p> <p>GROUP 15</p> <p>GROUP 16</p> <p>GROUP 17</p> <p>GROUP 18</p> <p>GROUP 19</p> <p>GROUP 20</p> <p>GROUP 21</p> <p>GROUP 22</p> <p>GROUP 23</p> <p>GROUP 24</p> <p>GROUP 25</p> <p>GROUP 26</p> <p>GROUP 27</p> <p>GROUP 28</p> <p>GROUP 29</p> <p>GROUP 30</p> <p>GROUP 31</p> <p>GROUP 32</p> <p>GROUP 33</p> <p>GROUP 34</p> <p>GROUP 35</p> <p>GROUP 36</p> <p>GROUP 37</p> <p>GROUP 38</p> <p>GROUP 39</p> <p>GROUP 40</p> <p>GROUP 41</p> <p>GROUP 42</p> <p>GROUP 43</p> <p>GROUP 44</p> <p>GROUP 45</p> <p>GROUP 46</p> <p>GROUP 47</p> <p>GROUP 48</p> <p>GROUP 49</p> <p>GROUP 50</p> <p>GROUP 51</p> <p>GROUP 52</p> <p>GROUP 53</p> <p>GROUP 54</p> <p>GROUP 55</p> <p>GROUP 56</p> <p>GROUP 57</p> <p>GROUP 58</p> <p>GROUP 59</p> <p>GROUP 60</p> <p>GROUP 61</p> <p>GROUP 62</p> <p>GROUP 63</p> <p>GROUP 64</p> <p>GROUP 65</p> <p>GROUP 66</p> <p>GROUP 67</p> <p>GROUP 68</p> <p>GROUP 69</p> <p>GROUP 70</p> <p>GROUP 71</p> <p>GROUP 72</p> <p>GROUP 73</p> <p>GROUP 74</p> <p>GROUP 75</p> <p>GROUP 76</p> <p>GROUP 77</p> <p>GROUP 78</p> <p>GROUP 79</p> <p>GROUP 80</p> <p>GROUP 81</p> <p>GROUP 82</p> <p>GROUP 83</p> <p>GROUP 84</p> <p>GROUP 85</p> <p>GROUP 86</p> <p>GROUP 87</p> <p>GROUP 88</p> <p>GROUP 89</p> <p>GROUP 90</p> <p>GROUP 91</p> <p>GROUP 92</p> <p>GROUP 93</p> <p>GROUP 94</p> <p>GROUP 95</p> <p>GROUP 96</p> <p>GROUP 97</p> <p>GROUP 98</p> <p>GROUP 99</p> <p>GROUP 100</p>

The viscosity of copper-ammonia cellulose solutions as an index of the quality of cotton fabrics. A. V. Sirovaya and A. P. Zakharikhov. *Khlopokovaya-Bumazhnyaya Prom.* 1949, No. 8, 9, 50-63; *Russ. Referat. Zhur.* 1949, No. 5, 120-1. — *Rev.* of the η of 1% copper-ammonia cellulose sols. is proposed for evaluating the resistance of the fabric to wear. Conditions of steeping and bleaching affect the η of copper-ammonia cellulose sols.; the temp. of bleaching has the greatest effect; next in order are concn. of active Cl in the soln. and duration of the process. The bleaching bath must be alk. (not less than 0.3-0.3 g. l. of NaOH), the soln. must contain approx. 1 g./l. of active Cl and the temp. of the bath should not be over 30°. In bleaching mercerized fabrics the alk. should be higher (0.4-0.5 g./l. of NaOH). Under these conditions of bleaching there is a considerable decrease of the η of the copper-ammonia cellulose soln. The η const. for bleached un-

mercerized and mercerized fabrics should be approx. 500 centipoises for 1 % copper-ammonia cellulose sols.

V.R. Kola

1ST AND 2ND DEGREE		3RD AND 4TH DEGREE		5TH AND 6TH DEGREE	
<p>Application of the method for determining the viscosity of cellulose solutions in the textile industry. A. V. Surovaya and A. P. Zakharovich. <i>Novye Metody Nauch. Issledovaniy</i>. Khimicheskaya Tekhnika, Moscow, 1940, No. 8, 121; <i>Chem. Abstr.</i>, 1940, No. 8, 121; <i>J. C. A.</i>, 40, 3900, 5022. — The existence of a direct relation between the η of the soln. of cuprammonium cellulose and the weaving properties of the fabric was verified empirically, and a method for the control of the strength of cotton fabrics from this η was developed. The effects of washing and of light on fabrics in relation to the η of their solns. was studied. In detg. the relation between the strength of the individual cotton fibers of various grades and the η of their solns., it is necessary to take in the account the area of the cross section of the fiber.</p> <p>W. R. Hearn</p>					
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>					
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RECH SYMBOLS		RECH SYMBOLS		RECH SYMBOLS	

1ST AND 2ND EDITIONS		PROCESSING AND PREPARATION WORK	
<p>25</p> <p><i>Bleaching conditions for obtaining highly viscous copper-ammonium solutions of fabrics. A. V. Surovaya and A. P. Zakharichikov. Khlopkovo-Bumazhnaya Prom. 1939, No. 10, 33-3; Khim. Referat. Zhur. 1940, No. 6, 110; cf. C. A. 26, 3904. — Bleaching with alk. soln. of NaOCl gives stronger cotton fabrics than bleaching with neutral hypochlorite or with solns. contg. only traces of alkali. Whiteness is slightly lower than that of fabrics bleached with neutral or weakly alk. solns., but is more resistant to steaming. Addn. of Na silicate to the bleaching soln. in the ratio active Cl:NaOH:Na₂SiO₃ = 5:1:10 produces a fabric which is white, and is stronger than is required by the existing standard specifications.</i></p>		<p>25</p>	
<p>ASB. 51.1 METALLURGICAL LITERATURE CLASSIFICATION</p>			
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<p>100000 110000 120000 130000 140000 150000 160000 170000 180000 190000</p>		<p>200000 210000 220000 230000 240000 250000 260000 270000 280000 290000</p>	

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23

The aging of paper. A. P. Zakharichikov. *Russk. Prom.* 24, No. 6, 6-10; No. 6, 8-12 (1969). A review with 14 references
Marshall Sittig

1. ALEKSEYEV, T. D.; ASHKENAZI, YE. S.; ZAFOSHOV, A. P.; KOLODIVA, G. V.;
CHISOVSKAYA, A. I.

2. USSR (600)

4. Paper Industry

7. Effect of the degree of polymerization of pulp on its characteristics in the
hollander process. Sum. prom. 27, No. 7, 1952

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

AGEYEV, L.M.; KOROL'KOV, S.I.; ZAKOSHCHIKOV, A.P., redaktor; VOL-
KHOVER, R.S., tekhnicheskii redaktor.

[Chemical and technical control and accounting in hydrolytic and
sulfite liquor production] Khimiko-tekhnicheskii kontrol' i
uchet gidroliznogo i sul'fitno-spirovogo proizvodstva. Moskva,
Gosstatizdat, 1953. 403 p. (MLRA 7:8)
(Wood pulp industry)

ZAKHARCHUKOVA, R.

V Hydrolysis of pentosans from cotton hulls, sunflower
hulls, corn husks, and beech sawdust. A. P. Zakharukova,
Z. M. Polygallo, M. G. Nemanov, and G. P. Sidorov.
Doklady i Leningrad. Priroda, No. 4, 9-11 (1964). Cotton
hulls (I), sunflower hulls (II), corn husks (III), and beech
sawdust (IV) were boiled in 0.5% H₂SO₄ solution for 1 hr.
(the ratio of the material to the solution was 1:100), washed,
dried, and hydrolyzed by boiling in 0.5 and 1.0% H₂SO₄
solutions for 1 hr. at atm. pressure. I, II, III, and IV, resp.,
contained 23.1, 24.1, 33.6, and 24.8% of easily hydrolyzable
polysaccharides, of which 20.2, 30.5, 35.6, and 29.2% were
pentosans, 39.2, 41.8, 13.9, and 45.8% of difficultly hy-
drolyzable polysaccharides, 1.13, 3.95, 3.66, and 4.8%
of uronic acids, 3.49, 2.69, 3.49, and 0.87% of proteins.
II and IV contained about 20% of pentosans that did not
hydrolyze readily. In III some hemicelluloses dissolved together
with pentosans. The yields of fermentable sugars were with
0.5% H₂SO₄ 3.21, 1.25, 4.16, and 1.33%; with 2.0% H₂SO₄,
13.85, 7.66, 15.59, and 7.44% based on pentosans; 0.2%
H₂SO₄ gave 25.4, 69.2, 15.2, and 21.2%; and 1.0% H₂SO₄,
12.5, 19.8, 10.2, and 7.4% of uronic acids. Pentosans in
III and I hydrolyzed rapidly, but the reaction was slower
with IV and II. The relative content of uronic acids in the
hydrolysis of II, even attaining the next yield of 29.34%,
has remained the same, but more volatile acids were formed
on treatment with 2.0% H₂SO₄. It was concluded that
these acids form extrinsically on the surface. The time of
reaction and the amount of acid used were varied. The results
showed that the reaction of hydrolysis of pentosans was
influenced by the nature of the material and the conditions of
hydrolysis. III and IV were more resistant to hydrolysis than
I and II. The results of the hydrolysis of pentosans from

3

ZAGOSKIN, B.I.; MACHINSKIY, A.P., kand. veter. nauk

The connection between a technical school and agricultural
production becomes stronger. Veterinariia 37 no.6:20-22 Je '60.
(MIRA 1617)

1. Zamestitel' direktora po uchebnoy chasti Ryazanskogo
zootekhnicheskovo-veterinarnogo tekhnikuma (for Zagoskin).
(Veterinary medicine--Study and teaching)

ZAGOSKIN, B. I. and MACHINSKIY, A. P.

"The connection between a technical school and agricultural production
is becoming stronger."

Veterinariya, Vol. 37, No. 6, ~~1966~~ 1960, p. 20

Zagoskin - Deputy Director for Sci. Training

ZAGOSKIN, Lavrentiy Aleksandrovich, leytenant; CHERNENKO, M.B., redaktor;
AGRAMAT, G.A., redaktor; BLOKOVIST, Ye.E., redaktor; VORONTSOVA,
A.N., redaktor; GLEYKH, D.A., tekhnicheskij redaktor.

[Voyages and explorations of Lieutenant Lavrentii Zagoskin in
Russian America during the period of 1842-1844] Puteshestviia i
issledovaniia Leitenanta Lavrentiia Zagoskina v russkoy Amerike
v 1842-1844 gg. Moskva, Gos.izd-vo geogr. lit-ry, 1956. 453 p.
(MLRA 9:5)

(Zagoskin, Lavrentii Alekseevich, 1807-1890) (North America--
Discovery and explorations)

PA 6/49127

ZAGOSKIN, M. P.

USSR Engineering

Jul 48

For RV - Construction
Soviet, Electric

For Construction on Soviet Construction in
Best Treatment, Casting and Forging Shops of Machine
Construction Factories, M. P. Tikhonov, M. P.
Zagoskin, A. S. Kudryavtsev, V. A. Dudin, Kirov
Region in Ural, 4 pp

"Proletariat" No 7

These were carried a third prize in the All-
Union contest. Describes how capacity of electric
furnace was increased, and construction and working

u/49127

USSR Engineering (Contd)

Jul 48

modified altered. Diesel cylinder blocks and heads
are cast in chills instead of molds. Mentions
new refinements in molding and molting techniques.
Before forging of caterpillar tracks in two heats
instead of three, reducing piston clearance in
cylinder and reducing air supply for flame in coke
furnace

u/49127

ZAGOSKIN, V.A.

Primary zoning in gold ore veins of the middle Vitim mountain
country. Geol. rud. mestozh. 5 no. 5:91-94 3.0 1963.

1. Univerzitet drushby natsionov inod Patria Amnaby.

ZAGOSKIN, V.A.

Stages in the ore formation of gold ore manifestations in the
central Vitim mountain country. Izv.vys.ucheb.zav.; geol.i
razv. 6 no.3:71-80 Mr '63. (MIRA 16:5)

1. Universitet druzhby narodov imeni N. S. Khrushcheva.
(Vitim Plateau--Gold ores)

1. ZAGOSKIN, Ye. I., Eng.

2. USSR (600)

4. Electric Transformers

7. Drying transformers with zero sequence current, Elek. sta., 23, No. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953, Unclassified.

ZAGOSKIN, Yu.B., inzh.; SHERMAN, V.L., inzh.

Screwdriver with flexible shaft for M5-M8 screws and nuts. Stroi.
1 dor. mash. 7 no.3:31-32 Mr '62. (MIRA 15:4)
(Screwdrivers)

KREYNDLIN, L.N., inzh.; ZAGOSKINA, G.V., red.; KOLOMEYER, V.Z., tekhn.red.

[Machine for sawing out hinge seats] Stanok dlia vyollivaniia
gnezd pod petli. Moskva, TSentr.biuro tekhn.informatonii Glav-
standartoma, 1959. 12 p. (MIRA 13:1)

1. Giprostandartdom (for Kreyndlin).
(Hinges) (Building--Tools and implements)

SHELA/DCHENKO, Ye.M., rei.; ZAGOSKINA, G.V., red.

[Production of particle board] Proizvodstvo drevsnoc-struzhechnykh plit. Moskva, 1964. 20 p. (MIRA 18:5)

1. Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut informatsii i tekhniko-ekonomicheskikh issledovaniy po lesnoy, tsellyulozno-bumazhnoy, derevoobrabatyvayushchey promyshlennosti i lesnomu khozyaystvu.

OTLEV, I.A., kand. tekhn. nauk; ZAGOSKINA, G.V., red.

[Pressing particle board in multistory hydraulic presses]
Pressovanie struzhechnykh plit v mnogoetazhnykh gidravli-
cheskikh pressakh. Moskva, TSentr. nauchno-issl. in-t
informatsii i tekhniko-ekon. issledovaniy po lesnoi, tsel-
lulozno-bumazhnoi, derevoobrabatyvayushchei promyshl. i
lesnomu khoz., 1964. 26 p. (MIRA 18:5)

1. Bryanskii tekhnologicheskii institut (for Otlev).

TANSKIY, V.V., inzh.; ZAGOSKINA, G.V., red.; SHINDAREVA, L.V.,
tekhn.red.

[Making particle board using the pneumatic fractionation
of shavings] Proizvodstvo drevesno-struzhechnykh plit s
pnevmaticheskimi fraktsionirovaniem struzhek. Moskva,
TSentr.biuro tekhn.informatsii Glavstandartdoma, 1959.
15 p.

(MIRA 13:1)

(Wood, Compressed)

KREINDLIN, L.N.; DROZDOV, I.Ya.; ZAGOSKINA, G.V., nauchn.red.;
SHEMLAREVA, L.V., tekhn.red.

[Using fiberboard in building] Primenenie drevesno-
voloknistykh plit v stroitel'stve. Moskva, TSentr. in-t
tekhn. informatsii i ekonom. issl. po lesnoi, bumazhnoi i
derevoobrabatyvaiushchei promyshl., 1963. 67 p.

(MIRA 16:10)

(Fiberboard)

EPSHTEYN, T.G.; ZAGOSKINA, G.V., red.

[Automatic lines for the veneering of panel-type parts and particle board] Avtomaticheskie linii dlia fanerovaniia shchitovykh detalei i struzhechnykh plit. Moskva, TSentr. nauchno-iss. in-t informatsii i tekhniko-ekon. issl. po lesnoi, tselliulozno-bumazhnoi, derevoobrabatyvaiushchei promyshl. i lesnomu khoziaistvu, 1963. 39 p. (MIRA 17:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy i konstruktorskiy institut derevoobrabatyvaiushchego mashinostroyeniya (for Epshteyn).

BAKHTYAROV, V.D.; ZAGOSKINA, G.V., red.; SHENDAREVA, L.V.,
tekhn. red.

[Ways of increasing the yield of wood products and the
efficient utilization of wastes] Puti povysheniya vykhoda
produktsii iz drevesiny i ratsional'nogo ispol'zovaniya ot-
khodov. Moskva, TSentr. in-t tekhn. informatsii i ekon.
issl. po lesnoi, bumazhnoi i derevoobrabatyvalushchei pro-
myshl., 1962. 71 p. (MIRA 16:6)

(Wood-using industries) (Wood waste)

SAKHAROV, M.D.; ZAGOSKINA, G.V., red.

[Present-day elements of window blocks for housing construction] Sovremennye konstruktsii okonnykh blokov dlia zhillishchnogo stroitel'stva. Moskva, TSentr. nauchno-issl. in-t informatsii i tekhniko-ekon. issledovaniï po lesnoi, tsellulozno-lumaznoi, derevoobrabatyvalushchei promyshl. i lesnomu khoz., 1963. 47 p.
(MIRA 17:9)

ZAGOSKINA, G.V., red.; SHLUDCHENKO, Ye.M., red.; POSPELOVA,
G.L., red.

[Production of particle board; based on the materials of the seminars] Proizvodstvo drevesno-struzhechnykh plit; po materialam seminarov. Moskva, TSentr.nauchno-issl. i informatsii i tekhniko-ekon. issledovaniy po lesnoi, tseluliozno-bumazhnoi, derevoobrabatyvalushchei promyshl. i leenomu khoz., 1964. 105 p. (MIRA 18:8)

1. Vsesoyuznyy seminar rabotnikov predpriyatiy drevesno-struzhechnykh plit, osnashchennykh otechestvennym oborudovaniyem. 1964.

KOZENKO, A.B.; ZONTOV, A.K.; KOPTSOV, V.S.; FROLOV, A.V., red.;
ZAGOSKINA, G.V., red.; SHENDAREVA, L.V., tekhn. red.

[Automated continuous production line for the manufacture of
fiberboards] Avtomatizirovannaya potochnaya liniya dlia pro-
izvodstva fibrolitovykh plit. Moskva, TSentr. in-t tekhn.
informatsii i ekon. issl. po lesnoi, bumazhnoi i derevoobra-
batyvaiushchei promyshl., 1962. 68 p. (MIRA 164)
(Fiberboard) (Assembly-line methods)

ARSEN'YEV, K.K., kand. tekhn. nauk; MOROZOV, N.A., kand. tekhn. nauk;
SHCHEDRO, D.A., inzh.; ZAGOSKINA, G.V., red.

[Pressing of furniture parts from ground wood] Pressovanie
mebel'nykh detalei iz izmel'chennoi drevesiny. Moskva,
TSentr. nauchno-issl. in-t informatsii i tekhniko-ekon. is-
sledovaniy po lesnoi, tsellulozno-bumazhnoi, derevoobrabat-
yvayushchei promyshl. i lesnomu khoz., 1964. 20 p.
(MIRA 17:11)

1. TSentral'nyy nauchno-issledovatel'skiy institut fanery i
mebeli.

ZHIGOSKINA, G. V.

KRASOVSKIY, S.P., redaktor; ZHIGOSKINA, G.V., redaktor; SHENDAREVA, L.V.,
tekhnicheskiy redaktor

[Manufacture of wood-shaving boards] Proizvodstvo drevessno-struzhech-
nykh plit. Moskva, Tsentral'noe biuro tekhn.informatsii, 1957. 42 p.
(MLA 10:8)

1. Russia (1923- U.S.S.R.) Ministerstvo bumazhnoy i derevo-
obrabatyvayushchey promyshlennosti
(Paperboard)

KOBAL'CHUK, L.M., kand. tekhn. nauk; BASKAKIN, Ye.N.; BELOZEROVA,
A.S.; ZAGOSKINA, G.V., nauchn. red.

[Mechanized dovetail gluing of wood] Mekhanizirovannoe
skleivanie drevesiny na zubchatyi ship. Moskva, TSentr.
nauchno-issl. in-t informatsii i tekhniko-ekon. issledovani
po lesnoi, tselliulozno-bumazhnoi, derevoobrabatyvaiushchei
promyshl. i lesnomu khoziaistvu, 1963. 43 p. (MIRA 17:5)

DADEYEV, V.; ZAGOSKINA, V.

In the struggle for high rank. Prof.-tekh.obr. 18 no. 6:27-28
Js '61. (MIRA 14:7)

1. Direktor Spetsial'nogo professional'no-tekhnicheskogo uchilishcha
No.11 (g. Shuya, Ivanovskoy oblasti) (for Dadeyev). 2. Pomoshchnik
direktora po kul'turnovospitatel'noy rabote Spetsial'nogo profes-
sional'no-tekhnicheskogo uchilishcha No.11 (g. Shuya, Ivanovskoy
oblasti) (for Zagoskina).

(Ivanovo Province—Textile workers)

(Ivanovo Province—Evening and continuation schools)

ZAGOSKINA, Ye.D.; SIKORSKIY, K.P.; VELICHKOVSKIY, Ye.I., red.;
KREKSHINA, L., red. izd-va; YAKOVLEVA, Ye., tekhn. red.

[Special aspects of teaching mathematics in grades 5-7 according to the new program; methodological instructions for Moscow teachers] Osobennosti prepodavaniya matematiki v V-VII klassakh po novoi programme; metodicheskie ukazaniya dlia uchitelei g. Moskv. Moskva, Mosk.rabochii, 1962. 84 p. (MIRA 15:7)

1. Mosccw. Gorodskoy institut usovershenstvovaniya uchiteley.
(Mathematics--Study and teaching)

ZAGOSKINA, Ye.D.; SIKORSKIY, K.P.; ZEVINA, A.N., otv. red.; VORONOV,
M.I., red.

[Recommended mathematics curriculum for the second half of
the 1962-1963 school-year (grade 5 to 11)] Primernyi plan
raboty po matematike vo vtorom polugodii 1962-1963 uchebnogo
goda (V-XI klassy). Moskva, 1963. 83 p. (MIRA 16:8)

1. Moscow. Gorodskoy institut usovershenstvovaniya uchiteley.
2. Direktor Moskovskogo gorodskogo instituta usovershenstvovaniya uchiteley (for Zevina).
(Mathematics--Study and teaching)

ZAGOSKINA, Ye.D.; SIKORSKIY, K.P. (Moskva)

Methodical hints pertaining to the teaching of mathematics in
the 5th and 6th grades. Mat. v shkole no. 6:45-53 P-D '90.

(MIRA 14:2)

(Mathematics--Study and teaching)

GRISHANOV, A., inzh.; ZAGOVALKO, M.

Excellent track maintenance on our division. Zhel.dor.transp.
36 no.6:65-69 Je '55. (MIRA 12:4)

1. Nachal'nik Kamyshlovskoy distantsei puti (for Grishanov).
2. Kamyshlovskaya distantziya puti (for Zagovalko).
(Sverdlovsk Province--Railroads--Track)

ZAGOVEL'YEV, A.

Toward new success! Prom,koop. 14 no.2:1-3 F '60.
(MIRA 13:5)

1. Predsedatel' pravleniya Rospromsoвета.
(Cooperative societies)

ZAGOVEL'YEV, A.

Our important tasks. Prom.koop. 13 no.1:1-3 Ja '59.

(MIRA 12:2)

1. Predsedatel' pravleniya Rospromsoвета.
(Cooperative societies)

S/076/63/037/003/004/020
B101/B215

AUTHORS: Yermakov, V. I., Smirnov, N. I., and Zagorets, H. A. (Moscow)

TITLE: Study of solutions by high-frequency methods. VI.
Dispersion effects in electrolyte solutions in a wide
frequency range of the electromagnetic field

PERIODICAL: Zhurnal fizicheskoy khimii, v. 37, no. 3, 1963, 544-552

TEXT: A non-resonance circuit (Fig. 4) is suggested for measuring the
relaxation effects in electrolytes. Measurements were conducted by using
the equations $\sigma_3 = \sigma_{BR}/Y_{sol}$ or $I_{sol} = JkU_{BR}/U_3$, where $k = 1/k_1/k_2/k_3$,
being related to the resistance
of the bridge and σ_{sol} to the electrolyte solution. Measurements with
frequencies up to 200 Mc/sec yielded a stepwise course of the curve
electroconductivity versus concentration for KCl, $MgCl_2$ and $AlCl_3$. This
is explained by steric hindrance effects on reformation of the hydrate
complexes with a certain lifetime. Shortlived hydrates are found at
Card 1/2

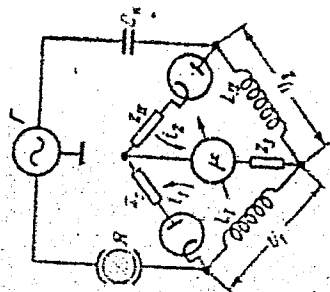
S/076/63/037/000/004/020
BIO/0412

frequencies above 10^8 cps, whereas below 1 Mc/sec, only the most stable hydrate shells are observed. There are 8 figures.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskii institut im. D. I. Mendeleyeva (Moscow Institute of Chemical Technology imeni D. I. Mendeleyev)

SUBMITTED: November 5, 1961

Fig. 4. Principle of a z-meter circuit with high-frequency compensation;
legend: Φ = cell; Γ = generator.



Card 2/2

L 11393-63

ENT(=)/BDS AFPTC/ASD

S/120/63/000/002/037/041

52

AUTHOR: Chukichev, M. V. and Zagorets, P. A.

TITLE: Using silicon alpha-particle counters for measurements in solutions

PERIODICAL: Pribory i tekhnika eksperimenta, March-April 1963. v. 8 no 2
112-113

TEXT: The article describes the recently developed silicon alpha-particle detectors using a surface barrier and a p-n junction. These counters may be used to determine the concentration of alpha active substances in solutions by measuring the intensity of alpha particles leaving the surface of such solutions. Test results are given and show that counter noise is 5 imp/min and that the instrument is capable of measuring a concentration of the order of $C_{U233} = 1.5 \cdot 10^{-6}$ g/cm³. There are two figures

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskii institut (Moscow Chemical Technology Institute)

SUBMITTED: May 28, 1962

Card 1/1 ja/CA

CHUKICHEV, M.W.; ZAGORETS, P.A.

Use of silicon alpha-counters for measurements in solutions. Prib. i tekhn.
eksp. 8 no.2:172-173 Mr-Ap '63. (MIRA 16:4)

1. Moskovskiy khimiko-tekhnologicheskoy institut.
(Nuclear counters)

AUTHOR: Zagorets, P. A.; Yermakov, V. I.; Grunau, A. P.

... by high frequency and nuclear magnetic re-
echo apparatus

SOURCE: Zhurnal fizicheskoy khimii, v. 37, no. 6, 1963, 1413-1415

TOPIC TAGS: high-frequency method, nuclear magnetic resonance method, spin echo apparatus, spin-lattice relaxation time, FeCl sub 3 - NH sub 4 F

ABSTRACT: A method has been proposed for the relative determination of the spin-lattice relaxation time (T_{1}) by means of spin echo technique. The possibility of using this method in studies of complexation in solutions has been illustrated on the example of complex formation in the system FeCl sub 3 - NH sub 4 F. Orig. art. has: 2 figures.

ASSOCIATION: Khimiko-tekhnologicheskii insititat im. D. I. Mendeleyeva
(Chemical Engineering Institute)

SUBMITTED: 00

DATE ACQ: 16 Jul 63

ENCL: 00

SUB CODE: 00

NO REF SOV: 005

OTHER: 002

Card 1/1

ZAGOREVSKIY, V.; DUDYKINA, N. V.; Prinimala uchastiye MINIKHEYVA, G. I.

Ring expansion in the reduction of oximes. Zhur. ob. khim. 33
no.1:322-323 '63. (MIRA 16:1)

1. Institut farmakologii i khimioterapii AMN SSSR.

(Oximes) (Reduction, Chemical)

ZAGOREVSKIY, V.A.; ZYKOV, D.A.

Series of pyran, its analogs, and related compounds. Part 2:
Dialkylaminomethylation of esculetin and 4-methylesculetin.
Zhur.ob.khim. 33 no.3:793-797 Mr '63. (MIRA 16:3)

1. Institut farmakologii i khimioterapii AMN SSSR.
(Pyran) (Esculetin) (Coumarin)

LEBEDEVA, L.N., assistant; ZAGOVORA, A.V., kand.biolog.nauk; RYAZANTSEVA, N.N.;
POGOREL'SKIY, L.G.; GOLUBINTSEVA, A.P., kand.sel'skokhoz.nauk
(Novosibirsk); GADZHIYEV, G.E.

Brief reports. Zashch. rast. ot vred. i bol. 6 no.7:56-57 J1
'61. (MIRA 16:5)

1. Kafedra plodovodstva i zashchity rasteniy Novosibirskogo sel'skokho-
zyaystvennogo instituta (for Lebedeva). 2. Ukrainskiy institut rasteni-
yevodstva, selektsii i genetiki, Khar'kov (for Zagovora, Ryazantseva).
3. Nachal'nik karantinnoy inspektsii Dagestanskoy ASSR (for Pogorel'skiy).
4. Zaveduyushchiy mezhrayonnoy biolaboratoriyey, Kubinskiy
rayon (for Gadzhiyev).

(Plants, Protection of)

ZAGOVORA, A.V.

Some characteristics of the reproduction of the Hessian fly in the
Ukraine. Vop. ekol. 7:61-62 '62. (MIRA 16:5)

1. Ukrainskiy nauchno-issledovatel'skiy institut rasteniyovodstva,
selektzii i genetiki, Khar'kov.
(Ukraine--Hessian flies)

P

COUNTRY : USSR
 CATEGORY : GENERAL & SPEC. ZOOLOGY. INSECTS
 Insect and Mite Pests.
 ABS. JOUR.: Ref Zhur - Biologiya, No. 4, 1959, No. 16239
 AUTHOR : Zagovora, A.Y.
 INST.: Ukrainian Sol. Res. Inst. of Plant Cultivation,*
 TITLE : Number of Hessian Flies with different methods
 of Soil Treatment.
 ORIG. PUB.: Byul. Ukr. n.-i. in-ta rasteniyevodstva,
 selekts. i genet., 1958, No. 2, 127-128
 ABSTRACT : Experiments were set up in 1955 in Kharkov-
 skaya Oblast on a field under winter wheat
 which had suffered radically from Hessian
 flies: 65.4% of the plants were damaged and
 there averaged 400 pseudo-cocoons on 1 m.
 The percentage of flies which flew out with
 soil diskings on 8 - 9 cm was 89.9 as compared
 with the control, with unplowed tillage on
 35 - 40 cm -- 82.7%, with plowed tillage with
 pre-plowing on 24 - 25 cm -- 19.5%. Deep

CARD: 1/2 *Selection, and Genetics

COUNTRY : USSR
 CATEGORY : GENERAL, SPEC. ZOOLOGY, INSECTS
 ABS. JOUR: Insect and Mite Pests,
 Ser Zhur-biologiya, No. 4, 1959, No. 16284
 AUTHOR : Zagorova, A.V.
 INST. : Ukrainian Sci. Res. Inst. of Plant Cultivation.*
 TITLE : Increased effectiveness in the struggle with the
 Corn Borer.

ORIG. PUB.: Byal. Ukr. n.-i. in-ta rasteniyevodstva,
 selekts., 1 genet., 1958, No.2, 129-131

ABSTRACT : According to a 3-year follow-up on corn stalks
 20, 30, and 50 cm high the percentage of cat-
 erpillars found in Bogodukhovsky Rayon was cor-
 respondingly 37.4, 48.9, and 67.1, and in
 Anar'kovsky Rayon it was 24.4, 34.5, and 56.2.
 After reaping of the corn combine for the grain
 on an average for 2 years there remained a
 stubble 20, 31 - 50, and 31 0 50 cm high and
 respectively 14, 58, and 68. For increased
 effectiveness in the struggle with the borer

CARD: 1 / 2 *Selection and Genetics

COUNTRY :
CATEGORY : GENERAL & SPEC. ZOOLOGY, INSECTS

ABS. JOUR.: Ref Zhur - Biologiya, No. 4, 1957, No. 18454

Author :
INST. :
TITLE :

ORIG. PUB.:

ABSTRACT : a series of projects is necessary to eliminate
it, and the remnants of heap, millet, and corn
stalks must be plowed in. -- A.P. Adrianov

CARD : 2/2

USSR / General and Special Zoology. Insects.

P

Abs Jour: Ref Zhur-Biol., No 4, 1958, 16420

Author : Zagovora A.V.

Inst : Not given

Title : Injurious Eurygaster on Maize.
(Vrednaya cherepashka na kukuruze).

Orig Pub: Zashchita rast.ot vredit. i boleznei, 1957, No 3,
49-50

Abstract: No abstract.

Card 1/1

SOV/143-58-11-3/16

9(3)

AUTHORS:

Zagovorskiy, Ye.N., Engineer, and Rummyantsev, Yu.G.,
Engineer

TITLE:

The Determination of Losses in Enclosed Buses and Their
Thermal Calculation

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy, Energetika,
1958, Nr 11, pp 21-30 (USSR)

ABSTRACT:

Power generators terminal buses have a design which is different from the open buses presently used. Terminal buses of high-capacity generators must meet the following requirements: a) extraordinary high reliability; b) reduction of losses in surrounding steel constructions; c) limiting electrodynamic forces on buses; d) high economic indexes. The simultaneous satisfaction of all these requirements is made difficult, since the known bus designs contradict economic requirements. At electric power plants where the generators are directly connected to the transformers without intermediate circuit breakers, buses are used having an envelope made of a material different from

Card 1/5

SOV/143-58-11-3/16

The Determination of Losses in Enclosed Buses and Their Thermal Calculation

that used for the buses. The author explains the possible versions in the design of such buses. There are buses with aluminum envelopes, with non-magnetic steel envelopes and buses with envelopes made of a non-conductive material (asbestos tubes, etc). Several cooling systems may be used for enclosed terminal buses: 1) Enclosed buses where the heat exchange is achieved by natural convection and radiation, are the most reliable, but they require increased spending for non-ferrous metals. 2) Enclosed buses with forced air-cooling require special protective measures for spending of arcs in case of short circuits and reserve ventilation equipment. Since the air is circulating between the bus and the envelope a dirt precipitation will occur in open cycle cooling systems, while closed cycle systems require an additional air cooler. 3) Liquid cooled bus terminals, using circulating oil or another dielectric cooling agent. The envelope may be reduced in this case, by approximately 30%, resulting

Card 2/5